

## **Frank D. Parker, Jr.**

Frank Parker is the CTO, co-founder and Managing Board Member of Great Plains Biosciences Group, LLC ("GPBG"), a sustainable agricultural and renewable energy technologies firm that develops biological-carbon cycle energy and fuels production, sustainable agricultural programs, public works, power and infrastructure systems.

Frank has developed a Systems Approach which synergistically achieves

- 1) national energy resources through flexfuel production facilities yielding cost-effective petroleum-replacement transportation motor fuels,
- 2) GHG carbon dioxide (CO<sub>2</sub>) mitigation and improved air quality,
- 3) beneficial utilization and extinguishment of problem biologically active agricultural and animal metabolic wastestreams, including municipal domestic wastewater effluents, and
- 4) unemployment/underemployment problems through significant, sustainable employment.

This novel Systems Approach elegantly and efficiently solves these problems via an integrated system of optimized discrete process loops.

Wastes and byproducts of an upstream process become inputs to subsequent, downstream processes in a series of energy and materials cascades. These modular systems can be deployed to meet site feedstock resource base, infrastructure and logistics conditions, as needed. This strategy achieves sustainable ecologic systems, enterprise units and employment.

## **Background**

***Project Engineering*** - Frank has over thirty years product and project design, engineering and management experience in environmentally responsible, high efficiency, low emission engineered chemical process, cogeneration and utilities systems for a variety of manufacturing, hospital and other public organizations, government and military installation central power plant and "smart buildings" applications.

Greatly concerned with depletion and contamination of fresh water resources, and dedicated to its protection, conservation and reutilization, his work in constructed marshland and bioreactor systems, algae-based fuels and bioproducts date from the 1970s.

***Power & Utilities*** - He has extensive industrial experience with Power and HVAC central plant boiler, chiller and compressed air systems upgrading, with Industrial and U.S. Military energy projects involving powerhouse utilities cost documentation, operator training and staffing optimization, improved facility operation and maintenance procedures, improved plant performance, energy efficiency and emissions control, reduction and management.

***Research*** - Frank has presented several papers on sustainable, environmentally responsible infrastructure and utilities production and optimization technologies and strategies. He has designed high efficiency, low emission, multi-fuel, futureproofed central utilities CHP systems producing electrical power, steam, chilled water, refrigeration and compressed air utilities.

His programs incorporate process and domestic wastewater recycling/ reutilization systems to achieve the lowest sustainable long-term facility capital and operational Life-Cycle costs.

**Management** - His management experience includes ten years as President and CEO in specialty manufacturing, engineering, and operations consulting firm. Frank has a BA in Economics from Oglethorpe University (1969) with Physics and Chemical Engineering minors. He presently holds 2 U.S. Patents for energy and process control systems, with Patentable work ongoing in gasification, power and related environmental fields.

### **Utilities and Environmental Optimization Projects**

**Renewing Rural America** - This program is an Economic Development engine incorporating the principals of Environmental Industrial Parks (EIPs) utilizing a systems-approach for achieving stable, robust economic viability in traditionally agricultural, rural communities. Renewing Rural America promotes efficiency and conservation; it produces clean energy, clean air, clean water and safe food programs. This provides the structure for human and economic infrastructure development and the achievement of stable, high value direct and indirect employment in added-value agricultural enterprises. This program demonstrates that a community can achieve improved economic viability by means of a strategy of environmental stewardship organized in an integrated, programmatic protocol of sustainable-versus-exploitive water and land use practices and added-value-versus-commodity business enterprises.

**USMA** - Implemented an Energy, Operations and Maintenance (O&M) Program which reduced USMA West Point's Central and Laundry Plants energy usage 29%; identified additional improvement opportunities in excess of 58%, then worth at least \$ 5.47 Million/Yr. (1984 Dollars). USMA Contract DAAG60-84-C-0149.

**USMC** - Implemented an Energy, Operations and Maintenance (O&M) efficiency improvements achieved worth more than 25% at Marine Corps Base Quantico Va.'s Main Boiler Plant then worth more than \$0.65 Million/Yr in direct fuel savings plus significant O&M savings (1984 Dollars). USMC Contract NOO123-84-0152/ZZ.

**DoD** - Utilities and O&M - Direct labor, energy and maintenance savings opportunities identified in the range of 25%-to-45% achievable across-the-board at US DoD shore facilities. In addition to improving Activity Readiness Standards of these facilities and moving significantly closer to compliance with Utilities Plant air & water emission/discharge environmental standards, these utilities optimization/management programs represent direct energy reduction opportunities of more than \$ 10 Billion/Yr (1985 USD) and \$ 10-30 Billion/Yr (1985 USD) Maintenance, Repair & Replacement savings. DoD/Battelle-PNL Contract 064526-A-T1.

**DoE** - In collaboration with Dr. L. D. Clements, Frank co-designed and fabricated two spouted bed gasification reactors (synthesis gas producing) for the biomass gasification program pilot plant at the University of Nebraska at Lincoln's Biological Systems Engineering Department. He is active in the development of ultra-low emission/ultra-high efficiency Biorefinery applications for conversion of animal manures and other agricultural wastes and "industrial crops" to clean transportation fuels, energy, chemicals and synthetic fiber production.

**International** - Frank led one-of-two US engineering teams (7 teams total) invited to respond to a World Bank RFP to retrofit Soviet-era coal plants in Poland; Frank's submittal won the Program Technical Review.

Subsequent to World Bank Contract Award, Frank's Team returned the World Bank contract as Bank of Poland "fees" and contract terms were unacceptable.

Frank resolved the island's municipal and resort wastewater treatment plants problems on the Island of

Nassau, The Bahamas, and prevented a cholera outbreak from progressing to epidemic levels for the Bahaman Ministry of Tourism.

Working with the Ministry of Agriculture, State of Sonora, Mexico, he developed proposals for desalination of seawater for the agricultural water requirements of Sonora's Yaqui Valley agricultural region and for improved efficiency and reduced environmental discharges of CFE's electrical power generating station at Guaymas, Sonora.

**Other** - Frank has performed numerous energy efficiency survey projects which included: Tulane University, (New Orleans, LA); Shaw University, (Raleigh, NC); Meharry Medical College, (Nashville, TN); and numerous other Energy Efficiency Improvement/Performance Contracting Projects for schools, hospitals, resorts and hotels.

Frank performed state-of-the-art utilities optimization assessments and implementation projects for facilities including: Mead Johnson Nutritionals, (Evansville, IN); Clairol, (Stamford, CT); Bristol-Myers Squibb, (Wallingford, CT); Bristol-Myers Squibb, (Syracuse, NY); University of Evansville, (Evansville, IN); Evansville Brewing Company, (Evansville, IN); and University of Southern Indiana, (Evansville, IN); Frank designed and installed a 650 Ton Natural Gas engine-driven Trane/York Chiller refit-conversion for the Candler General Hospital, (Savannah GA), Rehabilitation, refit and upgrading of numerous Federal Department of Justice, SE Bureau of Prisons electrical power, HVAC and security systems under programmed and Emergency contracts.

CTO of team receiving 1<sup>ST</sup> algae biofuels R&D Grant issued by North Carolina (2008)

CTO & technologies team leader on collaboration for development of 3,100 Acre Florida Science & Renewable Energy Park incorporating fresh water conservation and reutilization, Solar, Wind and Waste-to-Energy (MWe) Best Practice, Biomass-to-Liquid fuels (BTL), Natural Gas-to-Liquid fuels (GTL), Algae production for finfish & prawn, cold storage plant, greenhouse fruits & vegetables production, with distribution and logistics systems creating an AgraPlex integrated urban agriculture system yielding Clean Water, Clean Energy, Clean Air, Safe Food and Good Jobs. (Funding for project collapsed with the "Great Recession.")

CTO & technologies team leader on collaboration for development of a 2,400 acre California Mixed Use Real Estate & Renewable Energy development incorporating a Catholic Children's' Hospital and K-12 schools, Public Safety and National Guard Centers supporting zero discharge public works utilities infrastructure featuring fresh water conservation and reutilization, Best Practice Solar, Wind and Waste-to-Energy (MWe), Biomass-to-Liquid fuels (BTL), Algae production for finfish & prawn, dairy, winery, cold storage plant, greenhouse fruits & vegetables production, with distribution and logistics systems creating an AgraPlex integrated urban agriculture system yielding Clean Water, Clean Energy, Clean Air, Safe Food and Good Jobs. (Funding for project collapsed with the "Great Recession.")

CTO & technologies team leader on development of Florida Science Museum's Renewable Energy and facility self-sufficiency exhibits incorporating fresh water conservation and reutilization, Solar, Wind and Waste-to-Energy (MWe), Algae production for finfish & prawn, greenhouse fruits & vegetables demonstration. This program was selected over numerous other proposals. (Funding for project collapsed with the "Great Recession.")

CTO & technologies team leader on development of sustainable infrastructure in Guilin, PRC. GPBG traveled to Guilin in fall 2011 for "recon"; with Chinese economic questions, GPBG has backed away from this opportunity.

CTO for team developing the “Monticello Village” program, a fresh setting for retiring Baby Boomers. The program incorporates a physical plant with system of services in a small village atmosphere. Each residential group incorporates approx. 100 units to avoid an institutional feeling. The sites incorporate 40-50 acres of botanical park-like systems in an atrium that will be the “pull” that families and grandchildren will want to revisit.

CTO for team receiving National Science Foundation Phase 2 SBIR (just extended for 3<sup>rd</sup> program year) for on-farm production of algae used for animal (currently poultry) feed supplement/ augmentation.

Currently developing with Rotary International’s “Water and Sanitary Rotary Action Group” (WASRAG) and the WASRAG Foundation, developing Remote Village H2O purification and ice production modules for safe potable water production and medical supplies protection (vaccines degrade RAPIDLY when not temperature controlled). (Reference RDIUP modular public works systems).

Currently developing small-scale modular biogas-to-D2 (diesel fuel - can be modified for aviation turbine fuel) utilizing stranded Municipal Wastewater Treatment Plant flare-gas biogas (CH4) for domestic municipality fleet fuel requirements. (Reference our RDIUP modular public works systems).

### **Special Environmental Projects**

With Dr. L.D. Clements, Design and Development of the Rapid Deployment Integrated Utilities Plant (“RDIUP”) for USDoD and Refugee/ Humanitarian Agencies’ Refugee Camps’ potable water, solid wastes and wastewater field sanitation management and electrical power requirements; RDIUP is a modular ‘Public Works System in a Box.’ Frank’s work has been recognized by a USAF-DoD 2004 Nunn-Perry Award and subsequently by the United States Air Force’s nomination for a second Nunn-Perry Award in 2006.

Design of dry mill grain ethanol manufacturing plants, catalytic alcohol – methanol and ethanol production systems, BioFuel and BioPower MWe & MWt CHP Cogeneration systems, Process Wastewater recovery and reutilization, Hydroponics and Aquaculture systems, constructed marshland treatment systems incorporating Algae Biodiesel, 3<sup>rd</sup> Gen F-T & Fuel Alcohols Drop-in fuels production, and Coal Seam Methane/NatGas/Petroleum Product Water Desalination.

### **Example Papers**

**Biomass Waste Utilization for Cogeneration**, Dr. L.D. Clements, A.K. Janarthanan and F.D. Parker, resented at USDoE BIOENERGY '96, 15-20 September, 1996.

**Strategies for the Economic and Environmental Management of Municipal Solid Waste**, presented by F.D. Parker at Southface Energy Institute, USDoE, Sustainability Roundtable, 4 June, 1999.

**Illinois Clean Coal Program {etc.}** - Environmental Industrial Park (EIP) Economic Development Programs and Power Point briefings, F.D. Parker and D.K. Roberts, various Energy and Environmental symposia, Nov. 2004.

**The Rapid Deployment Integrated Utilities Plant (RDIUP System - Technology and Power Point briefings)**, Col. M. Morrow, USA Ret., F.D. Parker, and L.A. Zambrana, briefed by Col. M. Morrow, F.D. Parker and L.A. Zambrana at CE CERL/ERDC, Champlain, IL, AFCEE, Brooks AFB TX, AFCESA, Tyndall AFB FL, CENTOM, MacDill AFB FL, The Chief Engineer, ACE, the Pentagon, Washington DC, (Nov 2004).

**Renewing Rural America – The Grant County, KS. AgraPlex {etc.}** - Environmental Industrial Park (EIP) Economic Development Programs and Power Point presentations, F.D. Parker and D.K. Roberts, March 2004.

**Petroleum Replacement Transportation Motor Fuels - CleanTech Programs to Achieve Petroleum Obsolescence, Energy Self-sufficiency, Economic and National Security, Sustainable Employment and Environmental Stewardship Benefits**, F.D. Parker, July 2008.

**State of Florida School Bus FlexFuel and HEV Repower Summary**, Whitepaper, F.D. Parker, 11 June 2008.

**GPBG AgraPlex IREP - Food and Biofuels Production**, Whitepaper, F.D. Parker, 17 September 2012.

**Poultry Production Optimization Program**, Whitepaper, Wm Tooley and F.D. Parker, 3 September 2012.

**Swine Production Optimization Program**, Whitepaper, Wm Tooley and F.D. Parker, 18 September 2012.

**Dairy Production Optimization Program**, Whitepaper, Wm Tooley and F.D. Parker, 26 September 2012.

**Energy Self-sufficiency for the Three Affiliated Tribes**, Whitepaper, F.D. Parker, 02 August 2013.

**Electromagnetic Pulse (EMP) Hardened Building Systems**, Whitepaper, F.D. Parker, 21 August 2013.

**GPBG Renewable and Synthetic Fuels Production**, Whitepaper, F.D. Parker, 30 October 2013.

**Piper Dairy Final Report**, USDA Agriculture Report, J. Madole and F.D. Parker, 15 January 2014.

**Production of Aviation and Diesel Fuels from Biomass**, Whitepaper, F.D. Parker, 17 January 2014

**Method and Apparatus for Secure Infrastructure for Public and Commercial Works Facilities**, Patent Application, USPTO , F.D. Parker, 18 July 2014

**GPBG - CES Membrane Bioreactor System Wastewater Treatment Plant**, Whitepaper, F.D. Parker, 01 August 2014

**GPBG - CES Packaged Membrane Bioreactor System Wastewater Treatment Plant**, Whitepaper, F.D. Parker, 01 August 2014

**Barry Liss, PhD, PE**

**Resume**

**Company:** Creative Environmental Systems, LLC  
**Position:** Managing Member  
**Nationality:** American

PhD ChE and a licensed Professional Engineer in Florida with over 38 years professional experience in the technical, financial and management aspects of energy and environmental engineering, including process engineering, regulatory compliance, marketing and technical support of air, water & wastewater, odor management, soil and ground water remediation, bio-mass & municipal waste to energy and hazardous waste processing systems; also synthetic fuel technology, coal conversion systems, fluidization engineering and fluid particle systems and alternative energy systems.

**CAPABILITIES:**

- Business Plan Preparation
- Coal Utilization
- Feasibility Studies, Alternative Designs & Reviews
- Field Testing & Demonstrations
- Fluidization Engineering & Fluid Particle Systems
- Food Waste, Yard Waste, MSW, & Bio-Solids Composting
- Groundwater & Soil Remediation
- New Source Prevention Standards (NSPS)
- New Source Reviews (NSR)
- Maximum Available Control Technologies (MACT)
- National Emissions Standards for Hazardous Air Pollutants (NESHAP)
- Odor Management Systems Design
- Odor Sampling, Testing & Characterization
- Permitting & Regulatory Compliance
- Pilot Testing & Scale-Up
- Prevention of Significant Deterioration (PSD) Studies
- Process Engineering
- Project Management
- Proposal & Other Technical Document Preparation
- Remedial Alternative Analyses & Action Implementation
- Site Assessments - Energy Audits
- Technical-Economic Evaluations Of Emerging Technologies
- Technical Marketing & Sales
- Title V - Clean Air Act Evaluations
- Waste-To-Energy Facility Design, Planning, Permitting
- Wastewater Reuse Standards & Systems Design

## VALUTEK CONTAINERIZED WASTEWATER TREATMENT PROCESS - TECHNOLOGY & ECONOMICS

- Wastewater Treatment Systems Specification & Design

### CURRENT WORK EXPERIENCE / SIGNIFICANT PROJECTS

**2001-Current Innviron Corporation/EnviroPower Management, Inc.** – Senior Process Engineering Consultant – Proposal and project management on solid waste management systems design, permitting and planning projects including waste-to-energy, composting, transfer stations, water treatment, wastewater treatment and air emissions control projects, including international tender response preparation. Overall process engineering integration for all CES waste to energy, water and wastewater treatment plant projects.

**2005-Current Reardon Environmental, Inc.** – Technical Marketing Consultant – Provides chemical engineering expertise to quantify reagent usages for company's ISCO based remediation projects. Also provides marketing networking and regulatory support functions.

**2006-Current Classi Environmental, LLC** – New Business Development Consultant – Marketing, proposal and project management responsibilities on all areas of energy and environmental engineering consulting including project planning, permitting and management for solid waste management, waste-to-energy, water treatment, wastewater treatment and air emissions control systems and services.

**2011-Current Southern Waste Systems** – Odor Management Consultant – Prepared permit application and modifications for SUN RECYCLING 12 - COLLEGE AVENUE MRF Odor Management Plan.

### PRIOR EXPERIENCE / SIGNIFICANT PROJECTS

**EMO Energy Solutions, LLC** - Provided facility energy & water audits, modeling, energy efficiency building retrofit specifications/designs, & energy awareness programs. Created a cost saving combined energy efficiency, effluent discharge and odor management improvement program for wastewater treatment plants.

**Clean Air Systems, Inc.** - Technical Director- Prepared Business Plan and provided technical support for development & marketing of company's air pollution control systems. Developed functional relationships with regulators and political leaders.

**Noyes & Associates, Inc.** Consulting on wastewater projects and marketing its patented water and wastewater treatment technologies. Also prepared business plan and supported capital funding efforts. Helped develop the program and team to enable small communities to take over water utilities from counties or other larger entities.

**Terr-Aqua Enviro Systems, Inc.** Consultant & Independent Representative – Consulting on air emissions projects and marketing its proprietary UV-Oxidation based air pollution control technology. Also prepared business plan and supported capital funding efforts for industrial air emissions and homeland security applications.

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**YURCO Hope Team Management Company, LLC** – Executive Director - Organized team of over 30 companies, including a majority of the largest disaster recovery companies and prepared business plan to systematically assess, remediate and rebuild homes in the Hurricanes Katrina and Rita devastated areas.

**ZYME-TECH, INC.** - Invited to join in the formation of this new corporation, as Executive Vice President, which expanded the scope of Odor Control International, Inc. Successfully implemented the mal-odor abatement protocols in all of the waste management applications listed below. Corporate responsibility for all technical aspects of the company.

**Odor Control International, Inc.** - Developed formulations and application techniques for bioenzymatic treatment of mal-odors at landfills, waste water treatment plants, composting and other waste management facilities. Prepared business plan for company expansion.

**NYSFC**- Consultant for the Office of Energy-Related Inventions at the U. S. D.O.C.

**DOE/METC-University of Massachusetts** - Review of the thermodynamic, physical – chemical and detailed design issues for fluid bed coal gasifiers.

**Systems, Science and Software** - Prepared state of art survey on high temperature fluidization and ash agglomeration which resulted in the identification of a novel approach to the determination of incipient fluidization of sinterable solids. Assisted in population balance model preparation and data analysis related to coal gasifiers.

**Hydrocarbon Research, Inc.** - U. S. patent for HRI for novel multi-stage fluidized bed gasifier - heavy oil upgrading process.

**Clean Fuels Institute/CUNY** - Authored five (5) technical articles on coal conversion. Project manager for fast fluid bed gasifier pilot plant design and operation.

**Union Carbide Corporation** - Developed and demonstrated patented successful techniques for injection of agglomerating coals into fluid bed hydrocarbonizer.

**Chemical Construction Corporation** - Performed engineering planning and analysis for Clean Boiler Fuel Demonstration Plant Program. Identified and planned commercial plant subsystem alternative/feasibility studies. Developed reactor design manual.



## VALUTEK CONTAINERIZED WASTEWATER TREATMENT PROCESS - TECHNOLOGY & ECONOMICS

### EDUCATION:

B.Ch.E. The City College of New York.

M.Ch.E. The City College of New York.

Ph.D. The City University of New York

Thesis: "The Dynamic Behavior of Particulate Systems Involving Simultaneous Nucleation and Growth."

### TEACHING:

Process Instrumentation and Control Laboratory.

Non-Metallic Behavior Laboratory (polymer).

Metallic Behavior Laboratory (metallurgy).

Department of Chemical Engineering, The City College of New York.

### AWARDS:

International Brotherhood of Teamsters Scholarship

Dr. J. J. Klein Fellowship

NASA Pre-Doctoral Traineeship

### MEMBERSHIPS:

American Institute of Chemical Engineers.

American Chemical Society.

Water Environment Federation.

### PATENTS/PRESENTATIONS/PUBLICATIONS –

- 3 Patents awarded and 3 patents pending
- Over 20 technical papers and conference presentations

**Ganesh V. Kumar, PhD Resume**

**Company:** Creative Environmental Systems, LLC, Singapore  
**Position:** Chief Project Manager  
**Nationality:** Singapore

**Education:**

Bachelor of Engineering: Bangalore University, 1988.  
Master of Technology: Indian Institute of Technology, Bombay, 1990.  
Ph. D: Indian Institute of Technology, Bombay, 1994.

**Awards:**

- Outstanding University Researcher, National University of Singapore
- Best Student Award, Undergraduate Studies

**Books & Patents:**

- Books Published – 1
- Patents Awarded – USA – 1, Singapore – 1, Singapore (Pending) - 1

**Membership of Professional Bodies:**

- The Institution of Engineers (India)
- Indian Society for Technical Education
- Quality Circle Forum of India
- Hyderabad Management Association

**Key Assignments: Water & Waste Water Treatment, Waste Recovery**

Technology Development:

- Sludge less De-Coloration of Colored Waste Water. (Patent Pending)
- Raw Biogas Upgrading & Bottling
- Super Oxygenation of Drinking Water
- Micro-bubble Floatation System

Turnkey Implementation:

- Supervisory Project Manager for all CES-CES WTE WTP projects
- Designed, supplied and commissioned textile dyeing waste water treatment plant for textile effluent in Sihanouk Ville, Royal Crowntex Inc (RCI), Cambodia. **1Million Liters Per Day**
- Designed, implemented and commissioned bottled oxygenated water plant. This is the first such plant in Asia based on Asian technology. This plant has built in capability to produce alkaline water (negative ORP) and energy water as well, AENO Fresh, Johor Bahru, Malaysia. **10,000 Bottles/Day**
- Designed, supplied & commissioned bottled mineral water plant for Malee Mineral Water, Mersing, Malaysia. **125,000 Bottles/Day**

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- Designed, supplied & commissioned integrated waste recovery plant including pollution control systems for 5E Resources, Pasir Gudang, Malaysia. **Overall 75,000 Liters/Day**
- Designed, supplied & commissioned lube oil moisture removal system for SPM Oil Recycling, Ipoh, Malaysia. **10,000 Liters/Day**
- Designed & commissioned biological waste water treatment system for MSM Food, Batu Pahat, Malaysia. **30,000 Liters/Day**
- Designed & commissioned biological waste water treatment system for Eng Hap Heng Manufacturing, Batu Pahat, Malaysia. **20,000 Liters/Day**
- Designed, supplied & commissioned used automotive lube oil re-refining system for Toan Thang Loi Company, HCM, Vietnam. **8,000 Liters/Day**
- Designed, supplied & commissioned super oxygenated bottled water plant for Good Health Oxygen, Johor Bahru, Malaysia. **200,000 Bottles/Day**
- Designed, implemented and commissioned bottled oxygenated water plant for VSRO Purified System. This plant has built in capability to produce Oxygenated Water & Alkaline water (negative ORP), Johor Bahru, Malaysia. **60,000 Bottles/Day**
- Designed & supplied MBR based containerized sewage treatment plant for Water Works Technology, Calgary, Canada. **5 Units of 20,000 Liters/Day.**

### Design Services:

- Design of Textile dyeing waste water treatment system for resuse. Tirupur, India. **3 Systems, 10 Million Liters/Day, 5 Million Liters/Day & 4 Million Liters/Day**
- Design of 100MGD sewage treatment plant for Hyderabad city for Etimaad Engineering (Private) Limited, Lahore, Pakistan. **100 Million Gallons/Day**
- Design review of municipal sewage treatment plant in Yunan, China. **5 Million Liters/Day.**
- Design review of commercial building sewage treatment system for Cam Tam Quality Management & Environmental Technology Ltd, HCM, Vietnam
- Design of Anaerobic Digestion (CMART) based treatment plant Palm Oil Mill Effluent for Ladang Rayat, Malaysia. **1.4 Million Liters per Day**

### Consultant Services:

- Consultant for US Filter to analyze the piping system in their ultra pure water plant at Chartered Semiconductor Manufacturing, Singapore.
- Consultant to Goodform GRP Pte. Ltd, Singapore for designing and installing the FRP piping from raw water intake to RO building for Hyflux Desalination Plant located at Tuas, Singapore.
- Conceptualized, formulated and implemented polymer nanofiber based molecular filter project for Defence Science Technology Authority, Singapore through National University of Singapore.

## VALUTEK CONTAINERIZED WASTEWATER TREATMENT PROCESS - TECHNOLOGY & ECONOMICS

principals to a small company with 6 employees with 34 principals with an annual sales volume of \$9 million per year.

**1976 - 1985: George W. Noyes & Associates, Inc. - Salesman.** Initially responsible for valve sales development in power generating boilers and petroleum heaters. Major accounts included ENTEC, Inc. and ARAMCO. Later sales efforts were broadened to include the wastewater treatment and transfer market. Major accounts were the City of Austin, City of Houston, City of Corpus Christi, and the Rio Grande Valley. Set sales records in the field of Wastewater pumping systems. **Water and wastewater systems sales, design and manufacturing were later incorporated.**

**1975 - 1976: Cope-Vulcan, Division of White Consolidated Industries, Inc.** Operated as a field technical engineer, supervising startup of boiler systems. Significant projects include the Bruce Mansfield Power Plant in Shippingsport, Pa., the Union Camp Paper mill in Savannah, Ga., and Salem Nuclear Power Plant in Salem NJ.

### DANIEL G. NOYES CAREER HIGHLIGHTS

- Development of Process Technologies to Treat Hyper-Concentrated Organic Waste Streams (>100,000 mg/l BOD);
- Development of e-Cell technology,
- Development of Fluidized Bed BioReactor,
- Development of One Moving Part Treatment Plant,
- Development of the Kinetic Pump having a Centerless Impeller,
- Development of High Efficiency Process to Entrain Gas into Solution,
- Founded , Ecoloquip Inc.,
- First Small Clarifier Design to Utilize Maintenance Free Enclosed Gearbox,
- Development of Automatic Backwash Filter without Valves or Pumps,
- Assisted in Writing of Standards for the City of Austin Lift Station Design and Odor Control,
- Assisted in Writing Wastewater Treatment Plant Design Criteria for the Texas Natural Resource Conservation Commission ,
- Instructor at the Texas A&M Short School for Treatment Plant Operator Certification

### COL. EDWARD C. WEST, PE (ret'd)

Edward C. West, MSCE, MSBA, PE

Mr. West is a graduate of West Point and also holds a Masters in Civil Engineering from MIT as well as a Masters in Business Administration from George Washington University. During his military service, he

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also attended the Command and General Staff College, The Armed Forces Staff College, and the Industrial College of the Armed Forces.

From 1950 to 1972, he served as an officer in the United States Army, retiring in 1972 with the rank of Colonel. During his Army career, Mr. West supervised major design and construction work in the U.S. and overseas, commanded troop units in the U.S., Europe and the Far East, and served in the Office of the Chief of Research and Development and the Office of the Chief of Staff of the United States Army. He also commanded the Pittsburgh District of the U.S. Army Corps of Engineers.

After retirement from the Army, Mr. West joined Green Engineering Company in Sewickley, Pennsylvania as Executive Vice President. Subsequently he became Green's President and led the company through its transition from a family owned company to a company owned by its employees through an Employee Stock Ownership Trust, one of the first of its kind in the United States. While with Green, Mr. West took personal on site charge of Green's responsibilities (engineering, construction, and procurement) for the Interama project, a joint venture of Green and the Finley Development Company. Interama was a major (\$250,000,000) Inter-American trade, culture, educational, and entertainment center located in Dade County Florida.

Mr. West left the Green organization in 1976 to found his own successful management consulting business. In 1978, through a consulting assignment he founded Agripost, Inc., a company engaged in economical, environmentally compatible solid waste disposal through a unique composting process which enabled the conversion of solid waste to fertilizer. He later became the President of Agripost and served in that capacity as the company was taken public, won its first contract, and built its first plant in Dade County Florida. The plant was housed in a building occupying the space of seven football fields under roof, and processed 250,000 tons of municipal solid waste per year while producing 200,000 tons of fertilizer. Mr. West resigned as Agripost's President in 1990. Since that time, he has been a consultant in real estate sales and development, solid waste disposal, prefabricated housing (Romania), innovative (large scale) odor control, and water purification. Between 1992 and 1994, West served as second in command of a unique group formed at the request of the Governor of Florida and the Mayor of Homestead, FL to plan the rebuilding of the City after it was severely damaged by Hurricane Andrew. The plan was completed and approved in less than four months, and the group was further retained to oversee implementation of the plan.

At the present time, West is active in commercial and residential real estate sales, and as such has been consistently ranked in the top 5 % of real estate agents, nationwide. He is licensed in the State of Florida as a real estate broker, a real estate associate, and a mortgage broker. He has also served the community as president of Woodmont Country Club, Tamarac, FL., president of the Cloisters Subdivision of The Broken Sound Club, member of the Board of Governors of The Broken Sound Club, and active member of boards of various charitable organizations. West writes for local publications and is a regular public speaker.